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# NASA Procedural Requirements

**COMPLIANCE IS MANDATORY**

**NPR 8910.1B**

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(NASA Only)

## **Subject: Care and Use of Animals**

**Responsible Office: Office of the Chief Health & Medical Officer**

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## **Chapter 4. Space Flight Activities**

4.1 In addition to review by the investigators' IACUCs, space flight and supporting ground-based activities involving animals shall be approved by the ARC IACUC, which is charged with reviewing all space flight research protocols in accordance with the AWA, its implementing guidelines, PHS Policy, and this NPR.

4.1.1 Associated ground-based activities of flight proposals shall also be reviewed by the IACUC at the Center where the work will be conducted.

4.1.1.2 The ARC IACUC shall also review any ground-based activities not reviewed by another Center IACUC.

4.1.1.3 When ground-based activities are performed by an international partner, the laws and regulations of the country where the activities occur must be followed, with a minimum standard being the international guiding principles, "International Guiding Principles for Biomedical Research Involving Animals" and the COSPAR Policy and Guidelines for the Use and Care of Animals in Space-borne Research.

4.1.2 Once reviewed by the ARC and appropriate Center IACUC's, the results of those reviews shall be submitted to the NASA Flight Animal Care and Use Panel (NFACUP). The NFACUP provides Agency animal care and use policy concurrence for space flight activities and also assures NASA compliance with the COSPAR Policy and Guidelines for the Use and Care of Animals in Space-borne Research.

4.1.2.1 The NFACUP shall review the proposal and provide concurrence. Any issues identified will be reconciled with the relevant parties before concurrence is provided.

4.1.2.2 The NFACUP will be chaired by the NASA Chief Veterinarian, and membership will minimally consist of the Chairs of all NASA Center IACUC's or their delegated

representative. Additional members may be added as needed at the discretion of the Chair. It will be convened on an "as needed" basis.

4.1.2.3 A Center IACUC NFACUP member may participate in discussions regarding activities reviewed by their IACUC but not participate in concurrence decisions regarding such activities.

4.1.2.4 The NFACUP will submit each evaluation report to the ANO.

4.2 The process outlined in section 4.1 shall be applied to all experiments flown on NASA space flight platforms, regardless of the sources of support, and to all experiments flown on nonNASA platforms, including international vehicles, if they are supported by NASA.

4.3 Animal activities to be flown on board NASA-crewed spacecraft shall be reviewed by the IRB at JSC for areas related to crew health and safety associated with exposure to the animals.

4.4 Where multiple experiments approved individually are proposed to be conducted with the same experimental animal, an integrated proposal shall be reviewed by the responsible Center IACUC and the NFACUP prior to commencement of integration studies.

4.4 Protocols submitted to the responsible Center IACUC for proposed flight activities shall include an animal use and disposition plan that incorporates all animals necessary to support any proposed flight activity, including those necessary to cover launch delays and other contingency planning. Such plans will also include animals required to support any ground-based studies necessary to validate or integrate proposed in-flight, animal-based activities and hardware. It is the responsibility of the payload developer to obtain agreement with payload integration organizations and animal care and use oversight bodies regarding the development and review of crew training products and in-flight procedures.

4.4.2 As part of the review of proposed animal care and use activities, Agency IACUC's shall ensure that investigators and NASA program, project, and mission managers minimize the number of animals involved.

4.6 Animal activities utilizing a NASA ground facility in support of space flight activities shall also be approved by that Center's IACUC and concurrence received from the NFACUP, regardless of the institutional or national origin of the activities or the sources of support.

4.7 For veterinary care, compliance, and response to events during flight, the following guidelines shall apply:

4.7.1 The ARC and original reviewing Center IACUC's, with the concurrence of the NFACUP, are responsible for approved animal care and use procedures and activities including preflight, flight, and postflight;

4.7.2 The NASA Chief Veterinarian is responsible for veterinary support and for identifying a duty veterinarian available in person or by telephone at all times during flights that include animal activities;

4.7.2.1 The NASA Chief Veterinarian or designated duty veterinarian shall be the sole point of contact for the Flight Director and all mission managers for all animal care and

welfare issues during flight;

4.7.3 It is recognized that protocols for animal activities may need to be modified in flight as procedures are refined in response to operational constraints or experimental variation. When this occurs the following procedures shall be followed:

4.7.3.1 Significant changes to protocols that become necessary during flight require the approval of the majority of a quorum of the ARC IACUC or other designated IACUC. The IACUC Chairperson or designee will expeditiously seek this approval by designated review consistent with current acceptable procedures.

4.7.3.2 The duty veterinarian has the authority to temporarily suspend activities or to grant a temporary approval to the requested change until the IACUC can review the request.

4.7.3.3 Communications through standard mission management channels shall be used to immediately notify appropriate personnel of this requested substantive change or temporary suspension of activities.

4.7.3.4 The NASA Chief Veterinarian or designated duty veterinarian has sole authority in all matters related to the euthanasia of animals during a mission.

4.8 Mechanisms for interaction and coordination among NASA IACUC's and veterinarians with responsibilities for preparation, execution, and post-flight animal activities shall be developed and implemented by the NASA APRB, with concurrence and approval of the ANO.

4.9 Science requirements for flight experiments shall specify the resources required and mission priorities necessary to ensure that animal welfare requirements are met during the conduct of space flight research and should provide decision paths to be followed in the event that resource requirements cannot be met.

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